

ABSTRACT OF THE DISCLOSURE

A method of forming a via in a low-k dielectric material and without the attendant via poisoning problem, or a dual damascene structure formed in the same dielectric and without the same problem are disclosed. The vertical walls of the via opening are first lined with a low-k protection layer and then covered with a barrier layer in order to prevent outgassing from the low-k dielectric material when copper is deposited into the via opening. In the case of a dual damascene structure, it is sufficient that the hole opening underlying the trench opening is first lined with the low-k protection layer. The resulting via or dual damascene structure is free of poisoned metal and, therefore, more reliable.